

CLAIMS

1. A drug for preventing or treating a heart disease, comprising an expression vector containing a CD9 gene as the active ingredient.

2. The drug for preventing or treating a heart disease according to Claim 1, wherein the heart disease is a disease causative of heart failure.

3. The drug for preventing or treating a heart disease according to Claim 1, wherein the heart disease is a ischemic heart disease.

4. The drug for preventing or treating a heart disease according to Claim 3, wherein the ischemic heart disease is myocardial infarction.

5. The drug for preventing or treating a heart disease according to Claim 1, wherein the heart disease includes one or more of cardiomyopathy, hypertensive heart diseases, valvular disease, congenital heart diseases and myocarditis.

6. The drug for preventing or treating a heart disease according to Claim 1, wherein the heart disease is arrhythmia.

7. The drug for preventing or treating a heart disease according to Claim 6, wherein the arrhythmia is tachyarrhythmia.

8. The drug for preventing or treating a heart disease according to Claim 7, wherein the tachyarrhythmia is supraventricular arrhythmia and/or ventricular arrhythmia.

9. The drug for preventing or treating a heart disease

according to any of Claims 6 to 8, wherein the heart disease is one or more of WPW syndrome, long QT syndrome, Brugada syndrome, and arrhythmia-inducing right ventricular dysplasia (ARVD, ARVC).

10. The drug for preventing or treating a heart disease according to Claim 1, wherein the heart disease is associated with cardiac hypertrophy and/or tachycardia.

11. The drug for preventing or treating a heart disease according to Claim 10, wherein cardiac hypertrophy or tachycardia is caused by at least one of HB-EGF (heparin binding epidermal growth factor), HGF (hepatocyte growth factor) or angiotensin 2.

12. The drug for preventing or treating a heart disease according to any of Claims 1 to 11, wherein the expression vector is a viral vector or a non-viral vector.

13. The drug for preventing or treating a heart disease according to Claim 12, wherein the viral vector is adenovirus, adeno-associated virus, retrovirus, herpesvirus, herpes simplex virus, lentivirus, Sendai virus, poxvirus, poliovirus, symbis virus or vaccinia virus.

14. A method for preventing or treating a heart disease, comprising expressing a CD9 gene in heart.

15. The method for preventing or treating a heart disease according to Claim 14, wherein the heart disease is a disease causative of heart failure.

16. The method for preventing or treating a heart disease

according to Claim 14, wherein the heart disease is a ischemic heart disease.

17. The method for preventing or treating a heart disease according to Claim 16, wherein the ischemic heart disease is myocardial infarction.

18. The method for preventing or treating a heart disease according to Claim 14, wherein the heart disease includes one or more of cardiomyopathy, hypertensive heart diseases, valvular disease, congenital heart diseases and myocarditis.

19. The method for preventing or treating a heart disease according to Claim 14, wherein the heart disease is arrhythmia.

20. The method for preventing or treating a heart disease according to Claim 19, wherein the arrhythmia is tachyarrhythmia.

21. The method for preventing or treating a heart disease according to Claim 20, wherein the tachyarrhythmia is supraventricular arrhythmia and/or ventricular arrhythmia.

22. The method for preventing or treating a heart disease according to any of Claims 19 to 21, wherein the heart disease is one or more of WPW syndrome, long QT syndrome, Brugada syndrome, arrhythmia-inducing right ventricular dysplasia (ARVD, ARVC).

23. The method for preventing or treating a heart disease according to Claim 14, wherein the heart disease is associated with cardiac hypertrophy and/or tachycardia.

24. The method for preventing or treating a heart disease

according to Claim 23, wherein cardiac hypertrophy or tachycardia is caused by at least one of HB-EGF (heparin binding epidermal growth factor), HGF (hepatocyte growth factor) or angiotensin 2.

25. The method for preventing or treating a heart disease according to any of Claims 14 to 24, wherein the prevention or treatment is carried out by a gene therapy of transferring a CD9 gene.

26. The method for preventing or treating a heart disease according to Claim 25, wherein the gene therapy comprises using a drug containing an expression vector containing a CD9 gene as the active ingredient.

27. The method for preventing or treating a heart disease according to any of Claims 14 to 24, wherein the prevention or treatment comprises administration of an expression inducing substance for expressing endogenous CD9.